

REMARKS:

Claims 1-12 and 14-19 are in the case and presented for consideration.

Claim 1 has been improved to provide better define the claimed invention and to overcome the section 112 rejection raised in the Office Action. The claims are now believed to be in proper form.

Claims 12 and 14 have also been amended. New claim 19 has been added. Support for the amendment and claim 19 can be found, for example, on paragraph [0047] of the specification. Accordingly, no new matter has been added.

Entry of this Amendment and reconsideration are respectfully requested in view of the amendments made to the claims and for the remarks made herein.

First Double Patenting Rejection

Claims 1-11, 14, 15 and 18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,740,422. To advance the prosecution of the present application, but without conceding the correctness of the Office's rejection, the Applicant concurrently submits herewith a terminal disclaimer and the fee required under 37 C.F.R. § 1.20(d) to overcome the nonstatutory obviousness-type double patenting rejection. Accordingly, withdrawal of this ground of rejection is respectfully requested.

Second Double Patenting Rejection

Claim 12 is rejected under 35 U.S.C. § 101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 6,740,442 (the '442 patent). The rejection is respectfully traversed.

The Applicant submits that claim 1 of the '442 patent recites, among other features, a corner film section (col. 16, line 5), and respectfully directs the Office's attention to claim 12 of the present application which does not include this feature. Therefore, for at least this reason, claim 12 of the present invention is not claiming the same invention as claim 1 of the '442 patent. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection Under 35 U.S.C. 102

Claims 1-8, 11-12, 14 and 17 are rejected as being anticipated by U.S. Patent 4,476,196 to Poeppel, et al. ("Poeppel"). The reasons for the rejection are stated on pages 5-7 (paragraphs 12-15) and page 10 (paragraph 20) of the Office Action. The rejection is respectfully traversed.

It is well settled that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (citation omitted). See MPEP § 2131. Applicant respectfully submits that Poeppel neither teaches nor suggests Applicant's invention as it is defined in the claims.

The claimed invention will be discussed herein with reference to specific embodiments. This is for purposes of illustration only and should not construed to limit the spirit or the scope of the claimed invention.

The claimed invention relates to a flat type solid oxide fuel cell assembly (10). See,

e.g., abstract and Figs. 5-9. Each fuel cell includes a fuel gas electrode layer (2) and an air electrode layer (6), one of which can be made of a suitable porous material. See, e.g., specification, paragraphs [0037], [0038] and [0068].

The claimed invention is distinguished from Poeppel in that the entire porous electrode member can be implemented as the fuel or air flow path through the single fuel cell. See, e.g., specification, paragraph [0047]. “[S]ince ribs or the like for forming gas flow paths do not have to be provided”, unlike the cited prior art, it necessarily follows that the pores that are naturally present in the porous electrode layer are used to serve as passages for fuel gas or air. In this way, the contact area of the electrode layer relative to the fuel gas (or air) per unit capacity is enlarged (see, e.g., specification, paragraph [0038]), thereby improving the power generation performance. Also, the structure of the single cell of the claimed invention is simplified as compared to prior art single cell such as that described in Poeppel, and does not require a high processing accuracy during production.

In sharp contrast, Poeppel teaches using only certain structures within the fuel cell core as the pathways for carrying fuel and oxidant gases across the core (see Poeppel, col. 4, lines 7-9), rather than employing the entire structure of the electrode layer as passages for fuel gas or air. According to Poeppel, the fuel or oxidant can only enter and leave the fuel cell core through certain defined passageways. See Poeppel, col. 6, lines 28-31, indicating that the fuel/air distributing chambers, or manifolds 18 and 19, located on either side of the fuel cell core, “communicate with one another via passageways 13 formed in the core 11.” See also, Fig. 2 of Poeppel.

Therefore, Poeppel is at least missing the feature of “the entire first electrode

member forms one of a fuel flow path and an air flow path through the cell", as recited in independent claim 1, because it does not teach or suggest that the fuel/oxidant can flow lengthwise through the anode or cathode material itself, which forms the core 11, rather than only through the portions of the anode or cathode which has the anode/cathode material excavated or hallowed out to form the passageways 13. The Office specifically relies on Poeppel at col. 7, lines 62-67 as teaching,

[T]he webs or walls of the cathode and anode are comprised solely of the respective cathode and anode material. Therefore the passages in the anode and cathode are entirely formed by the respective active material (col. 7 lines 62-67).

However, in the same passage, Poeppel states that the webs or walls 70, 72 of the anode/cathode "in effect lie in the direct flow of the respective oxidant or fuel." This suggests that, the oxidant/fuel passing through the core 11 flows across the surface of the walls 70 or 72 disposed between the passageways 13 (see Poeppel, col. 7, lines 66-67), and not through the anode/cathode material constituting the walls 70, 72 or through the bulk of the anode/cathode material constituting the core 11 (as the Office seems to suggest). The passageways 13 also do not constitute the "entire" cathode or anode; otherwise, it would simply be a hole or cavity without any cathode/anode material. Unlike the claimed invention, there are areas in the core 11, such as the anode/cathode material surrounding the passageways 13, that cannot serve as passages for the fuel/air. See, e.g., Poeppel, col. 6, lines 28-31.

Since Poeppel does not teach that the entire porous electrode member can be a fuel/air flow path, as recited in independent claim 1 (claims 12 and 14 have similar

elements), these claims cannot be anticipated by the cited reference.

For at least the foregoing reasons, Applicant submits that the rejection has been overcome and respectfully requests withdrawal of the rejection and allowance of the independent claims.

With regard to the dependent claims, these claims ultimately depend from the independent claims, which has been shown not to be anticipated, and, hence, allowable, over the cited references. Accordingly, the remaining dependent claims are also allowable by virtue of their dependence from an allowable base claim.

Accordingly all of the claims are believed to be distinguished over the prior art and, by this amendment, the application and claims are believed to be in condition for allowance.

If any issues remain, the Examiner is respectfully invited and urged to contact the undersigned at the telephone number below.

Respectfully submitted,

/Chih-Sheng Lin/
Chih-Sheng Lin
Reg. No. 56,402
Attorney for Applicant
ph. (845) 359-7700

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NOTARO & MICHALOS P.C.
100 Dutch Hill Road, Suite 110
Orangeburg, New York 10962-2100

Customer No. 21706

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